outlet port **49** of the third test strip dock **48** until the third test strip **80** is received within the third test strip dock **48**. Furthermore, the first end **92** of the fourth test strip **90** can be placed within the fourth outlet port **51** of the fourth test strip dock **50** until the fourth test strip **90** is received within the fourth test strip dock **50**.

Referring to FIG. **3**, upon selecting a site, a clinician can adhere the adhesive on the bottom surface **38** of the lower portion **34** of the housing **30** onto a skin surface S of a patient where a blood sample will be accessed over a selected sampling site as shown in FIG. **3**.

Referring to FIGS. **3-5**, a user or an operator may then apply pressure to the dome-shaped surface **36** of the upper portion **32** of the housing **30** to actuate the upper portion **32** from the undeformed position (FIGS. **3** and **6**) to the deformed position (FIGS. **4** and **5**). Actuation of the upper portion **32** from the undeformed position (FIGS. **3** and **6**) to the deformed position (FIGS. **4** and **5**) moves the lancet **14** from the pre-actuation position (FIGS. **3** and **6**) to the puncturing position (FIGS. **4** and **5**) thereby causing the lancing of the skin surface S of the patient by the puncturing end **112** of the lancet **14** as shown in FIG. **5**. When the upper portion **32** of the housing **30** is depressed, the puncturing end **112** of the lancet **14** cuts into the skin surface S of the patient's body and capillary blood begins to flow into the inlet port **40** of the housing **30**.

After lancing and release of the pressure for the lancing action, the domed shape of the upper portion **32** begins to relax and returns to its original shape or undeformed position. This return of the upper portion **32** to its undeformed position creates a gentle vacuum during the process that helps to draw out the capillary blood through the inlet port **40** and to the reservoir or fluid channel **42** of the housing **30**. With the upper portion **32** of the housing **30** returned to its undeformed position and with the blood sample **16** received within the reservoir **42** as shown in FIG. **6**, the blood sample **16** is directed to flow through the reservoir **42** and to the test strip docks such that the test elements **60**, **70**, **80**, **90** each receive a portion of the blood sample **16**. In one embodiment, the reservoir or fluid channel **42** may include microfluidic pathways integrated therein to direct the blood sample **16** to the test strips **60**, **70**, **80**, **90** by capillary action. The blood receiving cavities **66**, **76**, **86**, **96** are adapted to receive a portion of the blood sample therein.

Referring to FIG. **7**, with the blood sample transferred to the test strips or test elements **60**, **70**, **80**, **90**, a user or operator may then grasp the second end **64** of the first test strip **60**, for example, and pull the first test element **60** from the first test strip dock **44** of the housing **32**. Next, referring to FIG. **8**, the collected blood sample within the first test strip **60** is transferred to the test strip reader **202** of the point-of-care testing device **200** to analyze the collected blood and obtain test results for tests such as glucose, cholesterol, or other blood sample results. Referring to FIG. **8**, the receiving port **204** of the point-of-care testing device **200** allows for the closed transfer of a blood sample from the first test element **60** to the point-of-care testing device **200**. In one embodiment, the viewing window **206** of the test strip reader **202** may indicate to an operator desired information. For example, the viewing window **206** may indicate what the point-of-care testing device **200** is analyzing the blood sample for.

In one embodiment, a portion of the blood sampling device **10** contains a sample stabilizer to promote efficient mixing with the blood sample. The sample stabilizer, can be an anticoagulant, or a substance designed to preserve a specific element within the blood such as, for example, RNA, protein analyte, or other element. In one embodiment, the sample stabilizer is provided within the inlet port **40** of the housing **30** of the blood sampling device **10** and/or any area where a primary blood sample is collected. In another embodiment, the sample stabilizer is provided in a portion of any of the reservoirs or fluid channels **42** of the housing **30** of the blood sampling device **10** and/or along any portion of a liquid path that the blood sample travels. In other embodiments, the sample stabilizer may be provided in any of the test strip docks of the blood sampling device **10**. In one embodiment, each of the fluid channels, reservoirs, test strip docks, and/or each of the test elements could each include a different sample stabilizer. In this manner, a single blood sample could be used for a variety of different tests, each of which could introduce an appropriate, and potentially unique, sample stabilizer for a desired use. A blood sampling device of the present disclosure provides flexibility in the nature of the additives and/or sample stabilizers introduced for a blood sample.

Referring to FIG. **5**, upon actuation of the lancet **14** to puncture the skin surface S, no or minimal blood will seep between the stick site and the housing **30** of the blood sampling device **10**, and, importantly, any seeped blood will not subsequently enter the blood sampling device **10**.

Collection using the blood sampling device **10** of the present disclosure allows "closed system" capillary blood collection with the following advantages, such as avoiding exposure of the operator or patient to the blood and avoiding exposure of the blood to atmosphere and potentially better preservation of in vivo blood gas concentrations. Also, the blood sampling device **10** of the present disclosure incorporates the concepts of lancing, blood collection, and multiple test strip collection. The blood sampling device **10** of the present disclosure allows for a blood sample to be collected on a plurality of test elements simultaneously. For example, the blood sampling device **10** allows for only a single stick on a patient and collection of a blood sample into multiple test strips for a point-of-care testing device. This ability to collect a single blood sample into multiple test strips reduces the anxiety and discomfort to the patient.

While this disclosure has been described as having exemplary designs, the present disclosure can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the disclosure using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this disclosure pertains and which fall within the limits of the appended claims.

What is claimed is:

1. A biological fluid sampling device, comprising:

a housing having an inlet port, a reservoir disposed within the housing and in fluid communication with the inlet port, and a first cavity in fluid communication with the reservoir;

a first test element removably receivable within the first cavity, wherein the first test element is a test strip; and

a puncturing element, a portion of which is disposed within the housing and adapted for movement between a pre-actuated position wherein the puncturing element is retained within the housing and a puncturing position wherein the puncturing element extends through the inlet port of the housing.

2. The biological fluid sampling device of claim **1**, wherein the biological fluid sampling device is adapted to receive a blood sample.